

With support from



by decision of the
German Bundestag



中德农业中心
Deutsch-Chinesisches Agrarzentrum



Sino-German Agricultural Centre (DCZ) 中德农业中心



Sino-German Agricultural and Food Update 中德农业与食品通讯



No. 14 March - May 2021



Disclaimer

This newsletter is published under the responsibility of the Sino-German Agricultural Centre (DCZ), which is funded by the German Federal Ministry of Food and Agriculture (BMEL). All views and results, conclusions, proposals or recommendations stated therein are the property of the authors and do not necessarily reflect the opinion of the BMEL.

Reprints or reproduction of any kind only with permission of the publisher.

Published by



Sino-German Agricultural Centre
Room 201, Zhong Ou Hotel,
55 Nongzhan Beilu, Chaoyang District,
100125 Beijing, PR China
Info-dcz@iagleipzig.de
www.dcz-china.org

中德农业中心
北京市朝阳区农展北路 55 号中欧宾馆
201 室（麦子店街，近盛福大厦）
邮编：100125
Info-dcz@iagleipzig.de
www.dcz-china.org

Implemented by



In partnership with



With support from



Federal Ministry
of Food
and Agriculture



by decision of the
German Bundestag

Sino-German Agricultural and Food Update

中德农业与食品通讯

No. 14 March - May 2021

In this issue

Foreword

Cover Story

- China's Organic Agriculture and Food Sector

Good to Know

- *Politics and Law*: Law on rural re-vitalization approved; Law on Prevention of Food Waste; Biosecurity Law; Zhejiang's Food tracing system to be promoted nationwide
- *Economy and Trade*: China Agricultural Outlook Report released; Demand for imported dairy products on the rise
- *ASF and Beyond*: Restrictions for transport of live pigs; Pig farming giants facing financial difficulties; Demand for imported breeding pigs on the rise

Upcoming DCZ Events

- Save the date – 2-3 June Sino-German Agribusiness Conference 2021 in Nanjing
- 14 June DCZ expert Dr. Ahmatjan Rouzi lectures at TU Berlin's Rurban China Lunch

DCZ Activities

- Greening Red China – DCZ participation in Chinnotopia Lecture Series
- Virtual Study tour "Animal Manure Treatment and Utilisation - Module 1"
- Exchange Forum on Sino-German collaboration in agricultural sciences launched

Activities of Other Bilateral Cooperation Projects

- Reports by DCALDP: Weather data 1956-2020; Machinery capacity training
- Report by Animal Breeding Project: Exchange despite travel restrictions

DCZ Publications

Recommended Reading

Upcoming Events 2021

Imprint

Sino-German Agricultural and Food Update

Foreword

Dear partners and friends of the Sino-German Agricultural Centre,

In the context of climate change, sustainable development and production of healthy food, organic agriculture plays an increasingly important role – internationally. The fact that the 14th Biofach was held in Shanghai in May 2021 signifies also the growing attention this subject receives in China.

In the cover story of this edition our expert Dr. Eva Sternfeld takes a look at the status and development of organic agriculture in China which showed a remarkable increase in the past 20 years. A growing middle-class requests reliable healthy food and has the financial means to afford the generally higher costs. To guarantee the quality of organic food, the establishment and implementation of a regulatory framework for organic production is an important step to further promotion and acceptance.

More laws of relevance to agriculture and rural development have been published recently. Prevention of Food Waste, Biosecurity and Rural Re-vitalisation were addressed in these new laws. You can find a brief description of the contests in this Newsletter or on our website on which we also will publish a more comprehensive analysis on the law on rural re-vitalisation in the near future.

Our partners in other bilateral Sino-German cooperation projects also contributed again to this newsletter, not only with brief reports on their activities but also with an article on “How the analysis of historical weather data can help with the planning of crop rotation” – “Weather data 1956 to 2020”.

Last but not least: our annual Agribusiness Conference is coming up. This year it will be held in Nanjing under the heading “Approaches to Modern and Sustainable Agriculture”. We are glad and proud that once again high-level contributions from the German and Chinese Ministry of Agriculture are confirmed, although partly only online due to the travel restrictions. A wide range of renowned experts and business representatives will present their approaches and solutions.

The very last but not the least: A very early announcement which is worth noting already. 12 to 14 November 2021 our partner, the Foreign Economic Cooperation Center (FECC) will organize the “World Expo on Digital Agriculture” in Shenzhen – and it is planned that the Sino-German Agricultural Week will be held under this roof. Stay tuned for updates!

With best wishes



Dr. Jürgen Ritter
Managing Director
Sino-German Agricultural Centre (DCZ)

Cover Story

China's Organic Agriculture and Food Sector

Dr. Eva Sternfeld, DCZ, Beijing

In May 2021 the 14th Biofach China was held in Shanghai. The trade fair, a regional off-spring of the world leading organic food trade fair Biofach organized by Nürnberg Global Fairs, stands for the remarkable development of China's organic food sector.

Introduction

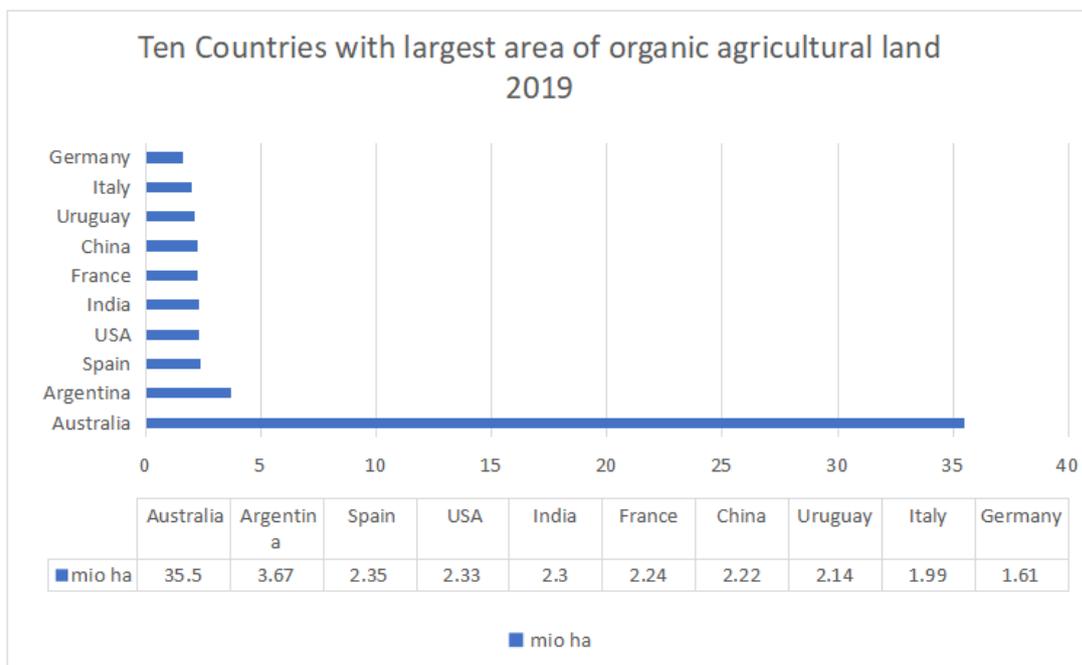
In the past 20 years China's organic agriculture and food sector caught up with leading global producers and markets. While in the year 2000 only 4000 ha of China's arable land had been certified as organic, in 2019 certified organic land accounted for 2.2 million ha (FiBL/IFOAM 2021, p.38). Thus, China is now among the ten countries with the largest area of certified arable land and arable land under conversion.

So far, certified organic land is still only accounting for 0.4 % of China's total arable land (compared to a proportion of 9.7 % of arable land in Germany). This suggests that organic farming is still a niche sector with growth perspectives (FiBL 2020, 43).

However, with an annual turnover of 8.5 billion euros China is already the fourth largest market for organic food (next to France 11.3 billion euros, Germany 11.9 billion euros and leading USA with 44.7 billion euros) and has a share of 8 % of the global organic food market.

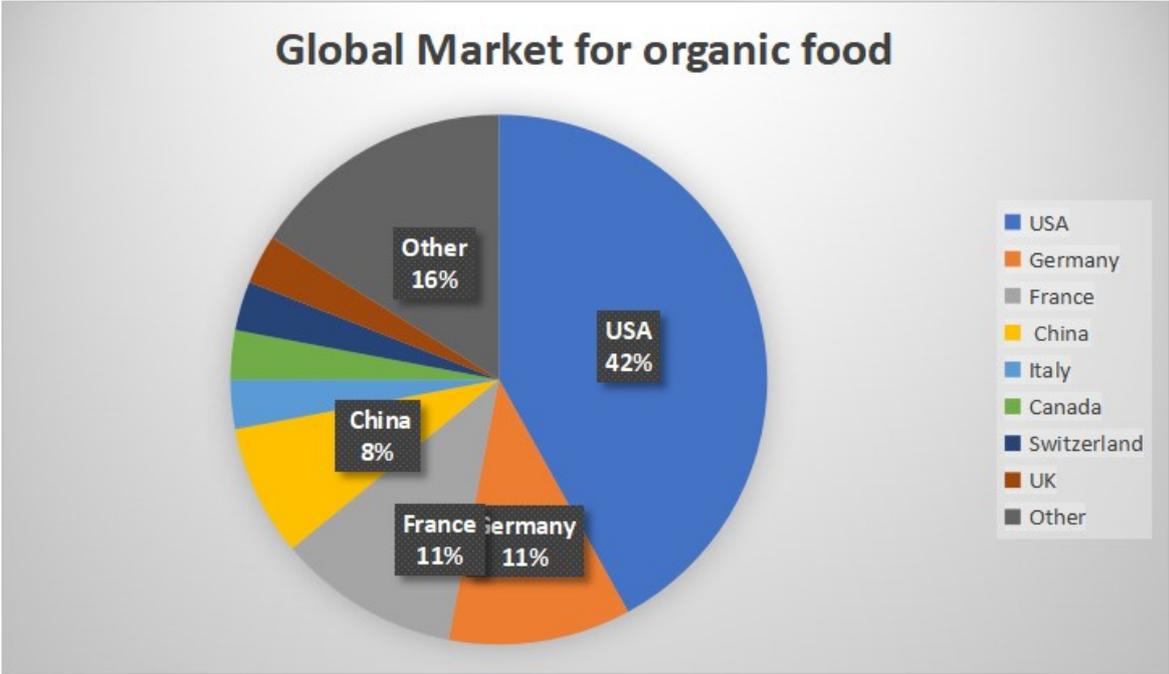
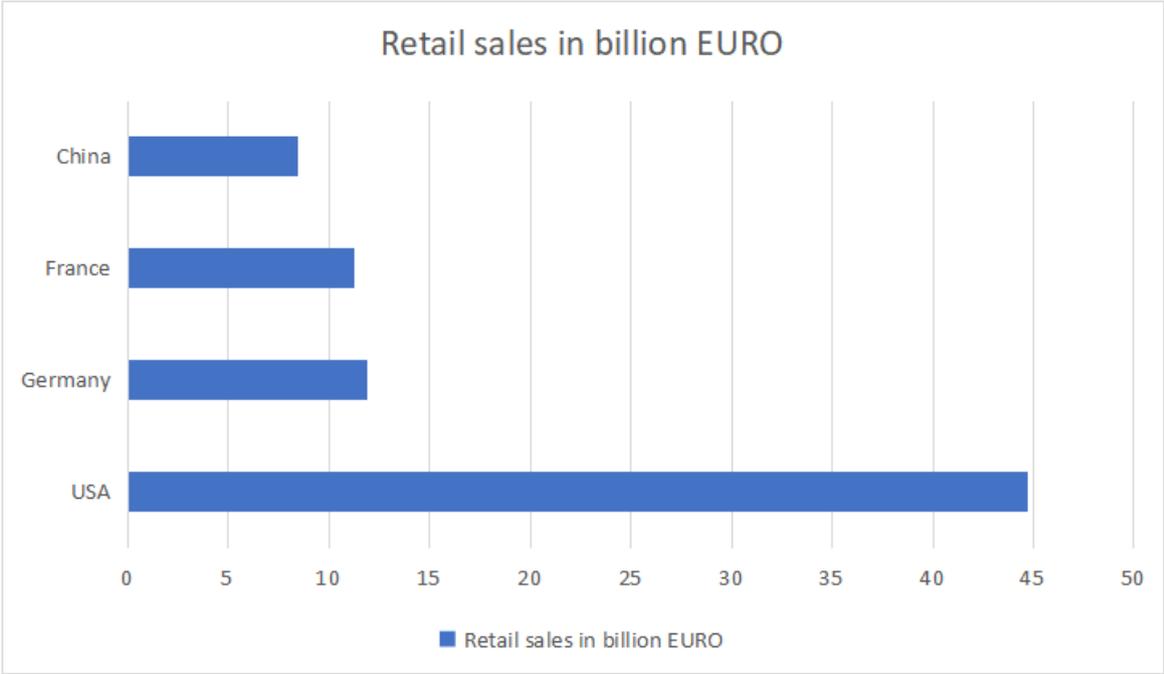
Moreover, the country emerged to be the biggest supplier of organic agri-food products to the EU, with 13.4 % of the total organic import volume in 2019.

This article takes a closer look into the development and prospects of the sector that is powered by an increasing demand for healthy and ecologically safe produced food by China's urban middle class as well as by an internationally growing market demand.



Source: FiBL 2021, p. 38

Sino-German Agricultural and Food Update



Source: FIBL 2021, 63

Sino-German Agricultural and Food Update

The early years

China has a long indigenous tradition of organic agriculture with a tremendous reservoir of knowledge and practices of organic fertilizer preparation, soil cultivation and biological pest control as they have been described for example by the American soil scientist F.H. King in "Farmers of forty centuries. Permanent agriculture in China, Korea and Japan", published in 1911. Many of these skills had been given up or forgotten in the course of the so called "Green Revolution" starting from 1970. With support of agrochemicals, mechanization and genetic improvements, over the years China not only managed to achieve an amazing increase in agricultural productivity, but also advanced to the world leading user of mineral fertilizers and pesticides.

Consequently, it was in the 1990s that the State Environmental Protection Administration (SEPA), the predecessor of today's Ministry for Environmental Protection and Ecology (MEE), became the main driver for promoting organic farming in China in order to reduce the massive environmental pollution, soil degradation and public health issues related to the overuse of agrochemicals. In contrast, the Ministry of Agriculture (MoA, today's MARRA) in light of the overall target of achieving food security was in the early phase reluctant to recommend farming techniques that might result in a potential decrease of yields. The ministry's position changed over the years when market opportunities for organic food became more realistic and with a worsening ecological crisis the need to find strategies for reducing agrochemical input became more urgent.

Modern organic agriculture that follows internationally accepted rules and standards had been first introduced in the 1990s by Western companies and was in the early years mainly export-oriented. In 1990, the Dutch certifier SKAL certified for the first time

green tea from Lin'an county in Zhejiang province as organic tea from China. In 1994, SEPA set up the Organic Food Development Centre (OFDC), attached to the Nanjing Institute of Environmental Science. Between 1997 and 2003 the German development agency GTZ (today's GIZ) in cooperation with OFDC supported the project "Development of Organic Agriculture in Poverty Stricken Areas in China", which helped to set up an organic tea plantation in a remote county in Anhui province. With support of GTZ, OFDC qualified in 2002 to become the first Chinese organic certified producer accredited by the International Federation of Organic Agricultural Movements (IFOAM) and the International Organization for Standardization (ISO). After accreditation OFDC proudly integrated the IFOAM logo into their logo. (<http://www.ofdc.org.cn/>)



In the following years more Chinese organic certified companies, such as the Organic Tea Research and Development Center (OTRDC), which is affiliated to the Tea Research Institute of the China Academy of Agricultural Sciences (CAAS) in Hangzhou have been established.

In the early years these organic labels were rarely found in the Chinese market and Chinese consumers had no idea of the concept of certified organic food. Moreover, organic labels had to compete with the better known "Green Food" 绿色食品 label which had

Sino-German Agricultural and Food Update

been introduced in 1990 by MoA's Green Food Development Center. The Green Food label was China's first government supported certification program to ensure food safety. Although often mistaken for organic food, "Green Food" Grade A permits the use of agrochemicals to a certain degree.



In 1995, the Green Food Development Center developed a "Green Food AA Standard" for premium products mainly designated for export and rarely found in local markets. These products had to comply with stricter international standards for organic food. In 2002, the Green Food Development Center set up its own organic certification body, the China Organic Food Certification Center (COFCC) with a new organic food label which basically replaced the Green Food AA label.

By using the extensive network of local Green Development Centers and their inspectors, COFCC quickly emerged as the country's leading certifying body and became the major partner in China for Nürnberg Global Fair's BioFach, the world's leading organic trade fair and organized the first BioFach China 2007 in Shanghai.

Development of a Regulatory Framework

Since 2003 several important steps towards institutionalization and regulation of organic food in China have been taken. In 2003, the China National Certification Administration (CNCA), a government institution affiliated with the General Administration of Quality

Supervision, Inspection and Quarantine (AQSIQ) formally took over the administration of China's organic products certification. In 2005, the "Regulations of the PR China on Certification and Accreditation" were released. The regulations stipulated that only those companies, that are registered with CNCA and accredited by the China National Accreditation Service for Standardization (CNAS) can carry out certification. In the same year the "National Standard for Organic Products" (GB/T 19630) and "Implementation Rules for Organic Product Certification" have been released. In 2012 and again in 2019 the standard and the implementation rules have been revised and streamlined for the requirements of a fast-developing sector.

The standard for organic products stipulates that uniform logos for labelling Chinese Organic Food Products should be printed on the package in addition to the label of the certification company.



Sino-German Agricultural and Food Update

Tab. 1: Development of Regulatory Framework for Organic Food Certification in China

1990	Dutch SKAL certification body issued the first organic certification in cooperation with the Nanjing Institute for Environmental Sciences (NIES)
1992	Ministry of Agriculture (MoA) established Green Food Development Center. Green Food AA standard becomes equivalent to organic
1994	State Environmental Protection Administration (SEPA) establishes Organic Food Development Center (OFDC) affiliated with NIES
1995	“Approach to Management of Organic Certification” and Technical Norms for organic food promulgated by SEPA
2001	Revised standards (with reference to IFOAM standards) published by OFDC
2002	MoA established the China Organic Food Certification Center (COFCC) under the Green Food Development Center. COFCC is the first certification body registered at China National Certification Administration (CNCA)
2003	CNCA takes over the administration of organic product certification
2005	“Regulatory Measures on Organic Product Certification Management” (by AQSIQ), “National Standard for Organic Products Certification” (GB/T 19630); National Logo for Organic Products introduced “Implementation Rules for Organic Product Certification” (by CNCA)
2011	“National Standard for Organic Products” and “Implementation Rules for Organic Product Certification” revised
2014	“Administrative Measures on Organic Product Certification” revised
2015	Plan for Sustainable Agriculture 2015-2030
2017	Regulations to Control Agrochemicals
2019	“National Standard for Organic Products” (GB/T 19630-2019) and “Implementation Rules for Organic Product Certification” revised

In addition, there is also a brown logo labeling organic food that was produced on agricultural land under conversion. The standard stipulates that only products with more than 95 % organic ingredients can be labeled organic. In recent years certification companies such as OFDC have introduced QR codes which allow to trace back the date and location of production and shall avoid an unauthorized use or use of fake labels.

The revised standard from 2019 included changes in production and processing, such as adding microbial supplements for the control and prevention of animal diseases and in plant production, and also added require-

ments for packaging and food additives eligible for organic production. According to the revised standard, if the organic production organization consists of several farmers, inspections can be limited to some farms only instead of inspecting each farm.

In many aspects the standard follows IFOAM criteria, but also included requirements of the Japanese JAS standard and the American NOP standard. The standard has thus clearly been designed in view of the export market. However, until today many countries have not recognized the Chinese standard. For example, since many years China is trying to be included in the EU “Organic Food Supplier

Sino-German Agricultural and Food Update



List of Third Countries” – without success. Without being included to this list, organic products from China produced for export to the EU are required to obtain a certification by an international control body like for example the French company ECOCERT or German CERES and KIWA BCS Ökogarantie, which are accredited with CNCA.

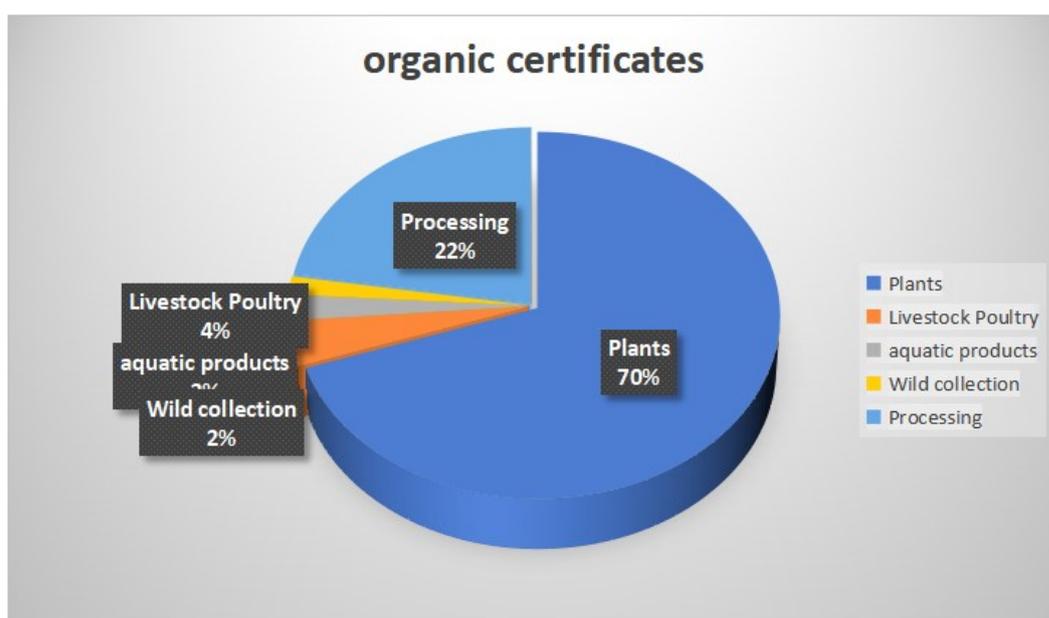
In addition to this requirement, in the past years China has been added to the list of those countries with mandatory tests of organic products for pesticide residues. Most recently the “EU guidelines on additional controls on products originating from China” (effective from 01/01/21 to 31/12/21) have been issued. (see also Sino-German Agricultural and Food Update 13/2021, p.10)

In response to these strict regulations, China has set similar strict rules, which stipulate

that imported organic food or food certified by international certifiers in addition needs to be certified by a domestic certifier to get placed on the shelves of Chinese supermarkets. The requirement of double certification is costly and therefore a barrier for China’s emerging organic food sector.

Present status of certified organic agriculture in China

By the end of 2019 according to CNCA, 13,813 farms and businesses were certified organic and 21,746 organic certificates had been issued. About 70% of organic certificates had been issued for products of plant origins (16,665) while 5361 were issued for processed items, only 953 were issued for livestock and poultry, 527 for aquatic products and 381 for products collected in the wild.



Source: CNCA/CAU 2020, 10

Sino-German Agricultural and Food Update

Tab.: 2 List of top 20 Chinese certifiers in 2019

Certifiers	Numbers of certificates	Number of certified companies
Beijing Wuzhou Hengtong Certification Co	3752	2595
Organic Food Development and Certification Center of China (OFDC)	2542	1127
Beijing Zhonglv Huaxia Organic Food Certification Center (OFCC)	1771	1033
Hangzhou Wantai Certification Co	1500	975
Beijing Zhongjinniu Certification Center Co. Ltd	985	709
China Green Certificate (Beijing) Certification Center	816	582
Ohti Certification Co	748	516
Beijing Zhongan Quality and Environmental Certification center	673	463
OTRDC	664	383
GRIT	643	493
China Europe Joint inspection and certification	543	423
Beijing Wuyue Huaxia management and Technology	502	322
China Quality Certification Center	472	333
Guangdong Zhongjian Certification Co	421	284
Beijing Zhongnong Lvan Organic Agricultural Technology	407	276
ECOCERT	407	297
Liaoning Fangyuan Organic Food Certification Co	405	214
Heilongjiang Guoan Product Quality and Safety Certification Center	365	172
Liaoning Liaohuan Certification Center	299	221

Source: CNCA/China Agriculture University 2020, 11

Of the 68 certifiers accredited by CNCA for organic certification, 20 companies provided 85% of the certifications in 2019. According to recent statistics, China's leading certifier is the Beijing Wuzhou Hengtong Certification Co (CHTC), a company that offers also certifications corresponding to the EU standard and Japanese JAS standard and has certified 2595 companies.

Despite the impressive increase of certified arable land and farmland under conversion, the total number of certified producers with 6308 and processing companies with 3865

remains comparatively small (in comparison, Germany counts 31,713 producers and 15,441 processing companies). Only a few companies (66) import organic products, whereas 1,198 are involved in the export of products (FIBL 2020, 61). The comparatively small number of certified companies implies that these companies regularly work with sub-contracted smallholders. This also may result in problems such as monitoring every single sub-contracted farmer, who are not necessarily well-trained – let alone convinced – organic farmers.

Sino-German Agricultural and Food Update

Almost half of China's certified 2.2 million ha agricultural land is located in North-East China, with Heilongjiang (517,100 ha), followed by Inner Mongolia (296,600 ha) and Liaoning (226,300 ha) having the largest certified area. Also South-West Guizhou (147,000 ha) and Yunnan (89,600 ha) are important provinces for organic agriculture. In the more densely populated areas of Eastern China it seems to be difficult to reach organic standards. Even well-meaning organic producers struggle in the vicinity of conventional farms to recover soil to a quality acceptable for organic farming standards and not to get "infested by pesticide spraying" of neighboring farms. Moreover, methods of biological pest control might not work when pesticides from surrounding farms led to a reduction of beneficial insects and birds.

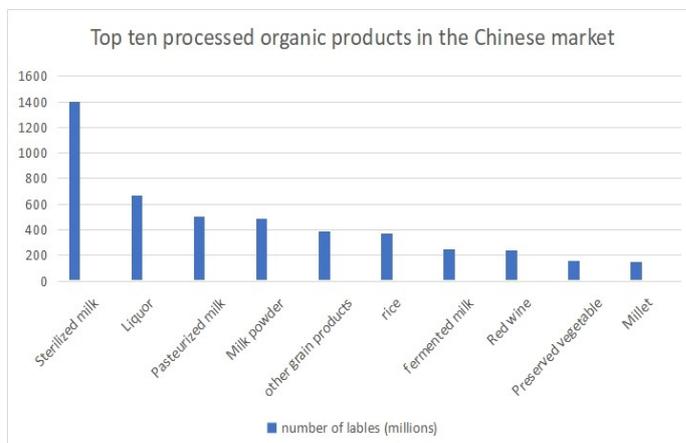
China's domestic organic market

In recent years, China advanced to the fourth largest market for organic products worldwide. In terms of products, organic dairy products (sterilized milk, pasteurized milk, milk powder and fermented milk) are dominating the Chinese market. Certified organic milk powder and sterilized milk were also the major imported items. This preference is possibly the lasting impact of the 2008 tainted milk scandal, when reportedly 300,000 children fell ill after consumption of milk powder contaminated with melamine. Until today some Chinese consumers distrust domestic conventional dairy products.

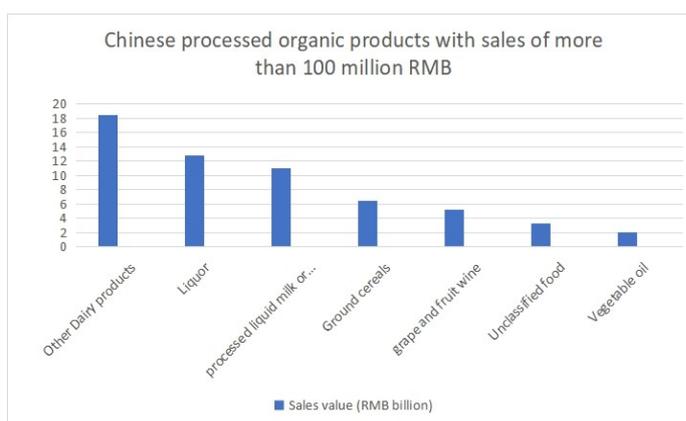
Import and export of organic products

The EU remains the main destination for export of Chinese organic products, despite the afore mentioned strict EU regulations and the lacking admission to the "Organic Food Supplier List of Third Countries".

In 2020, half of China's exported organic products (727 million US\$ in terms of value of goods) had been exported to the EU (360



Source: CNCA/China Agriculture University 2020, p. 17



Source: CNCA/China Agriculture University 2020, p.20

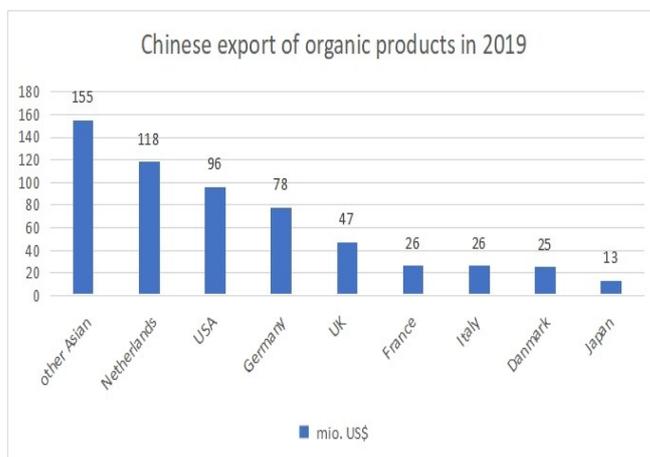
million US \$ or 299 million euros) with the Netherlands as the main destination for Chinese organic products (118 million US \$ or 98 million euros) followed by Germany (64 million US \$).

China is the EU's major source for imported organic agricultural products. However, two thirds of imports from China are oilcakes used as animal feed. (see Sino-German Agriculture and Food update no. 13).

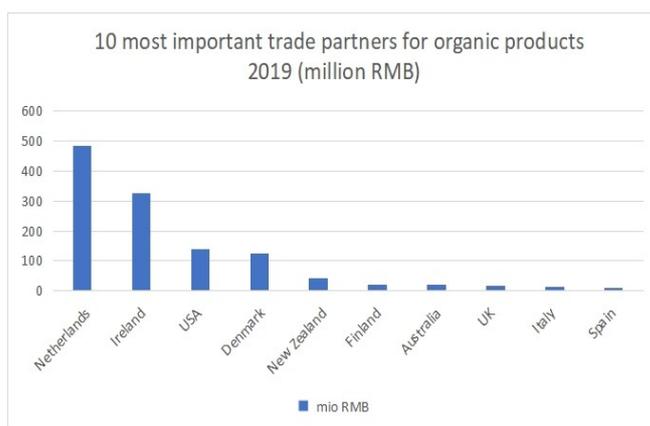
In 2019 China imported organic food for more than 12.5 billion RMB (about 1.6 billion euros). Here again, the Netherlands are the leading trade partner with almost 40% of the total trade volume (4.8 billion RMB or 620 million euros,) followed by Ireland (3.27

Sino-German Agricultural and Food Update

billion RMB or 420 million euros) and the US (1.39 billion RMB). Organic food imports from Germany so far play only an insignificant role in terms of trade value. From Europe China mainly imported organic milk powder, sterilized milk, butter, flour, infant food, pasta products, oil and red wine. All imported products are required to be manufactured according to the Chinese organic standard and need to be certified by a Chinese certifier accredited with CNCA.



Source: CNCA/China Agriculture University 2020b, p.130



Chances and challenges

In the past two decades China emerged as a considerably important producer and large market for organic food. The sector in recent years receives support from the highest political levels as it is promoted for improving

the environment and providing income opportunities in the countryside. An increasingly affluent and health-conscious urban middle class has created a promising domestic market for organic products. However, the sector still faces severe challenges. In a rural economy with the world's highest input of mineral fertilizer and pesticides, organic producers struggle hard. High production costs and a therefore limited domestic market makes it difficult to survive. In addition, as long as China is not included into the EU "Organic Food Supplier List of Third Countries", producers aiming at the international market complain about the costly need of multiple certifications. In addition, the sector suffers from China's general poor image for food safety and still needs to gain consumer's trust.

Sources:

CNCA/China Agriculture University (2020 a): China Organic Product Certification & Organic Industry Development (2020), ppt

CNCA/China Agriculture University (2020 b): 中国有机产品认证与有机产业发展 (2020) (China Organic Product Certification and Organic Industry Development 2020) full report in Chinese

European Union (2020): EU imports of organic agri-food products https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/farming/documents/market-brief-organic-imports-june2020_en.pdf

GAIN (2019): China published New Organic Standard and Certification Rules <https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=China%20Publishes%20New%20Organic%20Standard%20and%20Certification%20Rules%20Beijing%20China%20-%20Peoples%20Republic%20of%2012-02-2019>

FIBL and IFOAM (2021): The World of Organic Agriculture. Statistics & Emerging Trends 2021

Sino-German Agricultural and Food Update

<https://www.fbl.org/fileadmin/documents/shop/1150-organic-world-2021.pdf>

Sternfeld, Eva (2009): Organic Food “Made in China”. www.eu-china.net

Good to Know

Politics and Law

China adopts new law to promote rural re-vitalization

On 29 April 2021, the Law of the People’s Republic of China on the Promotion of Rural Re-vitalization was adopted after the third review at the 28th session of the 13th National People’s Congress Standing Committee, China’s top legislature. It provides an overall and systematic legal guarantee in pursuit of the rural re-vitalization strategy. The law promoting the implementation of the rural re-vitalization strategy through legislation is not only a requirement of the Party Central Committee, but also an urgent call for action. The law containing 74 articles will come into force on 1 June 2021. It is divided into ten chapters, followed by general rules namely industrial development, talent support, cultural inheritance, ecological protection, organizational construction, urban-rural integration, supporting measures, supervision and inspection and supplementary articles.

The new Law is a typical promotion law, which mainly regulates the duties that the state, people’s governments at all levels and relevant departments should perform around the rural revitalization strategy. In addition, the law also provides a special chapter on the supervision and inspection system, and clarifies the accountability system in terms of assessment, evaluation, reporting, inspection, and supervision, to ensure that the government and relevant departments perform

their duties in accordance with the law.

According to the new law, an assessment system of rural vitalization will be built, along with the establishment of an annual work report system as well as supervision and inspection systems.

Provisions of the law protect designated agricultural land from the use of non-agricultural purposes. It further calls for improving food safety standards and promote vocational training programs for employees working in the agricultural sector. It stipulates to reduce the use of mineral fertilizers, pesticides, energy and irrigation water. In the context of rural and urban development the law stipulates that regional reforms should follow a proper procedure to avoid that farmers would be relocated against their will or smaller villages being merged without consent of the villagers. To honor the work of farmers the law makes the Chinese Farmers’ Harvest Festival a statutory holiday of the day of autumn equinox (this year September 23, 2021).

http://www.xinhuanet.com/politics/2021-04/29/c_1127393923.htm

<https://npcobserver.com/legislation/rural-revitalization-promotion-law/>

Law on Prevention of Food Waste passed

On 29 April 2021, China’s top legislature, the Standing Committee of the National People’s Congress (NPC), adopted a new law on preventing food waste by offering legal backing to the country’s efforts to safeguard food security and promote traditional virtue of thrift. The 32-article law was approved after two reviews, and it took effect immediately.

Under the newly enacted law, misleading or inducing excessive food ordering could face a fine of up to 10,000 yuan (about \$1,543). Catering service providers could charge customers who leave excessive amounts of food

Sino-German Agricultural and Food Update

waste a disposal fee, but rates for the charge must be clearly stated, according to the law. Approximately 18 billion kilograms of food is wasted every year in China's urban catering industry, according to a report based on nationwide field research carried out by NPC deputies. The country also sees over 35 billion kilograms of grain loss at pre-consumption stages, including storage, transportation and processing, said the report.

Immediately after the law was passed Chinese media reported that Mengniu, one of China's dairy groups apologized for the negative impacts of a marketing campaign in partnership with a TV show that resulted in viewers' dumping large amounts of milk. It is reported that viewers purchased the milk only to get QR codes hidden inside the milk caps to vote for their favorite candidates in the TV show.

http://www.xinhuanet.com/politics/2021-04/29/c_1127393832.htm

<https://www.globaltimes.cn/page/202105/1222866.shtml>

Biosecurity law comes into effect

The Biosecurity law entered into force on 15 April. The law, consisting of 10 chapters and 88 articles, stipulates the establishment of systems of biosecurity risk prevention and control, including biosecurity risk monitoring and early warning, risk investigation and assessment, information sharing and information release. The law includes a provision on prevention and control of sudden outbreaks of infectious diseases and epidemics related to animals and plants. It also focuses on potential biosecurity risks in the fields of research, development and application of biotechnology, laboratory biosafety, genetic and biological resource safety, bioterrorism and biological weapons.

Source: http://www.xinhuanet.com/english/2021-04/16/c_139883217.htm

Zhejiang's food tracing system to be promoted nationwide

A food tracing system that has been developed as part of digitization reforms in Zhejiang province will soon be promoted nationwide. The Zhejiang Administration for Market Regulation and the GS1 (Globe Standard 1) China, signed a strategic agreement on the development of a governance model for food security. The food tracking system "Zheshilian" (浙食链), which had been launched on 15 March, has been applied in Zhejiang by more than 3000 business entities in the food industry so far. Consumers are now able to view a product's inspection report, sample survey, quality certificate, and disinfection certificate and other information through scanning codes printed on the package.

More: http://www.ezhejiang.gov.cn/2021-05/07/c_618840.htm

Economy and Trade

China's current market situation and an outlook until 2030: China Agricultural Outlook Report released

By Lea Siebert (DCZ)

On April 20, the China Agricultural Outlook Report (2021-2030) was officially released at the corresponding conference, hosted by the Agricultural Information Institute (All) of CAAS in Beijing.

The report, annually published by the Market Early Warning Expert Committee of the Ministry of Agriculture and Rural Affairs (MARA), provides a review of the current market situation for the main agricultural products as well as an annually update of projections for

Sino-German Agricultural and Food Update

the next ten years. This year's report reflects both the new political priorities set by the 14th Five-Year-Plan as well as the global impact of the ongoing COVID-19 pandemic.

Looking back to 2020, despite the pandemic China continued its series of high grain outputs exceeding 650 million tons for the sixth year running, achieving a harvest of 669.5 million tons. With regard to meat and feedstuff supply, the population of sows and pigs has recovered after the steep drop due to African Swine Fever (ASF) and reached now a population of over 90% of the 2017 level. A record high soybean output of 19.61 million tons was harvested from an enlarged planting area of in total 9.88 million ha. The trend towards modern agriculture is continuing with 39 additional agricultural parks and a comprehensive mechanization rate in agricultural practices of 71%. Despite high yields from Chinese production, agricultural imports have also increased significantly by 28% for grain and 60.4% for meat compared to the previous year to cover the growing consumption of agricultural products in China.

For the next ten years it is expected that not only China's economy shifts from high-speed to high-quality growth, but also the objectives in food provision shift from providing enough food per capita to providing high-quality food. It is expected that the consumption of animal products will increase rapidly. Due to the limited land resources, China aims to import "land-intensive" products, such as feedstuffs. To sustain a pig population of pre-ASF levels with an annual output of 49.27 million tons, soybean and corn supply has to be further increased, whereas the import of pork and poultry meat will decrease. Policies for a stable domestic food supply aim for a cultivated area of rice, wheat and corn of 96.53 million ha and a minimum planting area for soybean of 9.33 million ha. As defined in the 14th Five-Year Plan, a "dual circulation", also aiming for an increasing domestic

consumption of agricultural products, will be accelerated by increases in population and industrial consumption.

The different subtopics from the report were also presented at the conference. One of the talks discussed the current situation on China's efforts to curb carbon emission from agriculture – especially methane – to meet China's net zero carbon emission target by 2060. Smart agriculture was raised as a solution to food security. In particular, the application of blockchain in agriculture could help various stakeholders tracing products at different stages of the supply chain to increase production, quality, storage, distribution and credibility of agri-food products. Chinese tech companies like Huawei, Alibaba and JD.com are joining forces with farmers and agriculture companies to establish smart platforms and blockchain applications for specific agriculture products from specific regions.

Demand for imported dairy products on the rise

Despite an inherent genetic lactose intolerance among many Asians, in 2020 Chinese consumers on average drank 30 liters of milk, five times more than in 2012 when only 6 liters were consumed. Since last year, the Corona crisis and the marketing of dairy products as healthy food which would strengthen body's defenses helped to further promote the demand for milk and other dairy products such as yoghurt. The strong demand is good news for domestic dairy companies as well as for international producers of dairy products. In 2020, China imported more than one million tons of liquid milk. Liquid milk had been mainly imported from New Zealand, Australia and the EU, with the EU recording the biggest increase in exports. The strong development of the Chinese market helped the EU to compensate for reduced

Sino-German Agricultural and Food Update



Sterilized milk imported from Germany on a supermarket shelf in Beijing (Photo: Sternfeld/DCZ)

domestic consumption due to COVID-19 lockdowns.

In contrast the demand of imported milk formula is shrinking. Producers in Australia, New Zealand and in the EU reported a sharp drop in sales. This was mainly caused by the travel restrictions because a lot of these imports were traded by Chinese travelers. The decrease in demand for imported milk formula might also indicate that finally, more than 12 years after the 2008 Melamine tainted milk scandal, Chinese consumers have renewed trust in the quality of their domestic dairy companies.

Source: <https://www.scmp.com/economy/china-economy/article/3123344/chinas-health-conscious-consumers-push-liquid-milk-imports>

ASF and beyond

Pig farming giants face financial difficulties

It is reported that a number of China's large industrial pig farming ventures are facing financial difficulties due to low market prices for meat and high costs for imported feed. These companies have invested into modern high-rise farms such as the 26-story facility near E-Zhou in Hubei province, which can

produce 600,000 pigs per year or ultra-large facilities such as the so called "pig city" built by pig farming giant Muyuan near Nanyang, Henan province which can produce 2.1 million pigs per year. Construction costs and running costs for these modern facilities are said to be 30 percent higher than the costs for conventional farms. It is reported that some of the big players in China's pork industry such as Jiangxi Zhengbang and New Hope Liuhe already have issued profit warnings.

Source: <https://www.agrarheute.com/markt/tiere/china-neue-asp-welle-bringt-schweine-hochhaeuser-einsturz-581017>

Restrictions for transport of live pigs to reshape China's pork industry

While in 2020 African Swine Fever (ASF) seemed to be largely under control and China claims that the pig farms have restocked their herds to almost pre-2019 level, there have been reports about single outbreaks in northern China recently. About 10 outbreaks had been reported by the end of April, including one outbreak in Inner Mongolia and two in Xinjiang.

In order to better control outbreaks and spread of ASF in the future, China plans to restrict the transport of live hogs. It is

planned to split the country in five regions. From May onwards no pigs, apart from breeding pigs and piglets will be allowed to be transported across the boundaries of these regions. At present, it is estimated that every year about 140 million pigs (about 20% of the herd) are transported across China. With the new transport restrictions in place, it is expected that the new rules will have an impact on the regional prices for pork, while main pork producing areas in northern China might experience a drop in prices. Furthermore, prices might increase in southern China and may also cause companies to move pig farms back to the south. It is also expected that more slaughtering facilities will be built in northern China and the transport of frozen meat will lead to an expansion of the cold-chain industry.

Source: <https://www.bnnbloomberg.ca/china-s-plan-to-restrict-hog-transport-will-reshape-300-billion-pork-industry-1.1595174>

<https://www.reuters.com/business/healthcare-pharmaceuticals/china-reports-african-swine-fever-outbreak-inner-mongolia-2021-04-29/>

Demand for imported breeding pigs and call to improve genetics of China's pig herd

It is estimated that due to the ASF crisis China lost about 10 million breeding pigs. Efforts to restock China's sow population increased the demand for imported breeding animals. In 2020, about 28,000 so called great-grandparent breeder pigs had been imported to China. Most of these were sent from France and Denmark. The demand for imported animals seems even to accelerate, in the first quarter of 2021 alone China flew in already more than 10,000 live breeder pigs. At the same time, China aims to improve the genetics of domestic pigs to produce more

meat while consuming less feedstuff. The drive to improve livestock genetics is part of China's goal to become less dependent on imports of livestock and feed.

According to MARA's National Livestock and Poultry Genetic Resources Committee, China's sow herd productivity is 30% lower than in developed countries. As a consequence according to the Committee, millions of tons of feed grains could be saved and pressure on land could be eased if the genetic quality of domestic breeding pigs was improved.

Sources:

<https://www.pigprogress.net/World-of-Pigs1/Articles/2021/2/Wanted-Millions-of-sows-for-China-713289E/>

<https://www.bnnbloomberg.ca/china-wants-to-improve-genetics-of-its-pigs-so-they-re-fatter-and-eat-less-1.1596229>

Upcoming DCZ Events

Save the date - 2-3 June Sino-German Agribusiness Conference 2021 in Nanjing

We are looking forward to DCZ's upcoming Agribusiness Conference, which will be held on 2-3 June, 2021 in Dongjiao State Guesthouse in Nanjing. The conference on "Approaches to Sustainable and Modern Agriculture" will be organized as a hybrid event with physical attendance and online participation from representatives of the ministries of both countries, Chinese and German agricultural and food industry as well academic and research institutions. An attractive program featuring keynote speeches by high-level representatives and thought-provoking presentations on approaches in animal husbandry as well as in the seeds and crop sector is currently being prepared. On 3 June, a half-day excursion is planned. More details on the

Sino-German Agricultural and Food Update

agenda will be provided shortly.

- For on-site participation in Nanjing please register with your full name, affiliation and email address by 25 May at info-dcz@iakleipzig.de
- Participants who will not be able to attend in Nanjing can follow the conference via online streaming and Zoom: <https://zoom.com.cn/j/67925303469?pwd=T2p1QjFsZXhaSzZtemMvazRyVfVHdz09> Meeting ID: 679 2530 3469; Passcode: 2021

Please also follow the news on our website and LinkedIn account: <https://www.dcz-china.org>

DCZ expert Ahmatjan Rouzi lectures at Rurban China Lunch of TU Berlin

On 14 June, 12:15-13:45 CET DCZ expert Dr. Ahmatjan Rouzi will give an online lecture on “Rural Development and Sustainable Smart Agriculture in China” at the China Center for Science and Technology of TU Berlin. The lecture is part of the “Rurban China Lunch” lecture series. For more information about the event which is accessible online via zoom please check https://www.china.tu-berlin.de/menue/projekte/urbanixx/china_lunches/. For registration write to: urbanixx@china.tu-berlin.de

DCZ Activities

New Team members

Two new staff members joined the DCZ recently:

Andreas Hansen

Advisor Agricultural Policy Dialogue (APD)

has been working in the field of international development cooperation for more than 25 years with an emphasis on Southeast Asia and Central Asia. He is an agricultural engineer by profession complemented by an apprenticeship as a farmer. He has ample experience as program and project manager in international development projects as well as working with the private sector including a brief period in which he operated his own company in Germany and Thailand. Email: a.hansen@iakleipzig.de

Prof. Dr. Li Yumei

Advisor Agribusiness Dialogue

has over 20 years of experience in agricultural law and policy, environmental law, and Sino-German comparative law. She got her Master degree in Agricultural law from China Agricultural University, and Ph.D. training on Environmental Law from China University of Political Science and Law. She was a visiting scholar at the University of Göttingen from 2005 to 2007, and went to UC Berkeley as a visiting scholar at law school from 2015 to 2016. Email: yumei.li@iakleipzig.de

Greening Red China – DCZ participation in Chinnotopia Lecture Series

DCZ experts Dr. Eva Sternfeld and Lea Siebert participated in the Chinnotopia lecture series jointly organized by TU Berlin, CAU Kiel and Ruhr University Bochum. In their online presentation they gave an introduction on the current challenges for China’s agriculture and presented policy responses for a “digital re-vitalisation” of rural areas as well as examples of innovative solutions of Chinese smart agriculture to the German audience. A recording of the event “Screening Greening China” can be viewed at: <https://www.youtube.com/watch?v=U184NUVBkUI>

Sino-German Agricultural and Food Update

Virtual Study Tour “Animal Manure Treatment and Utilisation” Module 1

On 7 and 8 April the DCZ, in cooperation with the Institute for Environment and Sustainable Development in Agriculture (IEDA) of CAAS and the Sino-German Animal Breeding and Husbandry Project successfully organized the first module of the virtual study tour on “Animal Manure Treatment and Utilization”. Originally planned as a real study tour for Chinese researchers to Germany, the activity had been redesigned as a hybrid workshop series with on site and online participation due to the COVID 19-related travel restrictions.



Photo: DCZ

The module 1 with the topic “Environmental and Administrative Aspects” was attended by 40 participants on site and 100 participants online from all over China and Germany. Opening remarks were delivered by Dr. Chen Tianjin (CAAS, Department for International Cooperation, Bilateral projects), Dr. Jürgen Ritter, managing director of DCZ, Liu Chousheng (National Animal Husbandry Station) and Ferdinand Schmitt (managing director of the Sino-German Animal Breeding and Husbandry Project). In her keynote Prof.

Dong Hongmin, deputy director of IEDA outlined the importance of mitigating emissions from animal husbandry for climate change protection and China’s target to achieve GHG emission neutrality by 2060. She also introduced related research projects of her institute.

The first panel focused on administrative aspects of soil and water protection. Dr. Svenja Fuhrmann from the Federal Ministry for Food and Agriculture, Department for International Projects, introduced relevant European and German regulations including the EU nitrate guideline and the German fertilizer act. Dr. Frank Augsten from the Thuringian office for Agriculture and Rural Areas provided the perspective from a German federal State. Dr. Christine von Buttlar from the consulting company IGLU talked about water protection and use of organic fertilizers. She stressed the importance of different soil types regarding the risk of nitrate leaching and provided information about manure storage solutions as well as low-emission application technologies and conservation (strip-till) tillage and intercropping on nitrogen levels in various soil depths.

The second panel on “greenhouse gases from stable systems” was opened by a presentation from Professor Barbara Amon (Leibniz-Institute for Agricultural Engineering and Bioeconomy) who provided an overview of the impacts of nitrogen on air, soil and water quality and biodiversity. She further informed about current emissions and targets in Germany. In the final section of her presentation, she explained some current and upcoming research projects of her research group such as current research on modelling and measuring air flow in naturally ventilated barns and the impact of livestock feeding on N-surplus. Some of these projects are implemented in cooperation with Prof. Dong Hongmin’s research group. Prof. Liu Dezhao, from the college of Biosystems Engineering

Sino-German Agricultural and Food Update

and Food Science of Zhejiang University, gave a presentation on odorants removal technologies for intensive livestock production and how biofilters can avoid odor from organic manure. The last presentation of the first day was given by Prof. Jörg Oldenburg (Ingenieurbüro Oldenburg) who introduced adaptation strategies and technologies for lower emission and exhaust air cleaning systems in pig husbandry.

The topic “greenhouse gases – adaptation and mitigation strategies” was covered in the first panel of day 2. Prof. Walter Stinner from the German Biomass Research Institute elaborated on mitigation of CH₄, NH₃ and N₂O emissions by anaerobic digestion and sealed digestate storage tanks. Helmut Döhler from Döhler Agrar GmbH showed how ammonia emissions in swine stable systems can be mitigated by innovative stable technologies and management such as a reduction of emitting surfaces, frequent removal of slurry, reduction of dietary protein, and reduction of air temperature by “cooling fins and pipes”, acidification to reduce the pH-value of slurry for achieving a 60 – 80 % reduction of emissions, biofilters for smaller farms and bio-trickling filters for larger farms.

The keynotes were followed by three company presentations: Big Dutchman introduced the PigT, a system for separation of faeces and urine to avoid ammonia emissions in pig farms; the company Bauer/FAN explained the advantages of Bedding Recovery Unit (BRU) in cattle husbandry and the company Sano explained the advantages of Smart Dairy Nutrition for lower emissions.

The final panel focused on “fertilization with organic fertilizers”. Holger Beßler from Humboldt-University Berlin introduced recent research on the assessment of humus and nutrient effects of organic fertilizers and the establishment of organic matter as a carbon sink. Prof. Jürgen Augustin from the Leibniz

Center for Agricultural Landscape Research presented research results on the impacts of deep tillage and fermentation residue on carbon and nitrogen dynamics of eroded soils. Peter Müller from AgUmenda consulting showed different technologies for the application of organic fertilizer. The last three presentations of that day were given by companies. KleuTec a start-up in agricultural technology showed an innovative system to avoid soil compaction by heavy machines for slurry application through a piping system. The companies Fliegl and Bauer demonstrated technologies for slurry transport and distribution.

The next workshop module will deal with the topic [“New Research and innovative technologies in manure and digestate treatment”](#) and is scheduled for mid of June 2021 (tbc).

The full program and a selection of the presentations is available as download from our website www.dcz-china.org



Photo: DCZ

Sino-German Agricultural and Food Update

Exchange Forum on Sino-German collaboration in agricultural sciences launched

On 29 April, the *Exchange Forum on Sino-German collaboration in agricultural sciences* started with a first workshop at the CAAS Agriculture Information Institute (AII). On request of the AII a number of German researchers from renowned institutions actively participated online and voiced their cooperation interests with the AII. Promoting new research collaborations in agricultural sciences between China and Germany is one of the main tasks of the S&T Platform. This series of workshops with German and Chinese researchers from different Chinese institutions will continue throughout this year.

The Exchange Forum is the result of joint efforts of the CAAS Department for International Cooperation, Division for Bilateral collaboration and the DCZ. Despite a tight preparation schedule, the DCZ could arrange the participation from six German and international institutions, namely University of Hohenheim, Thünen-Institute, Humboldt University Berlin, Research Institute of Organic Agriculture (FiBL) and Leibniz-Institute for Agricultural Engineering and Bioeconomy (ATB).

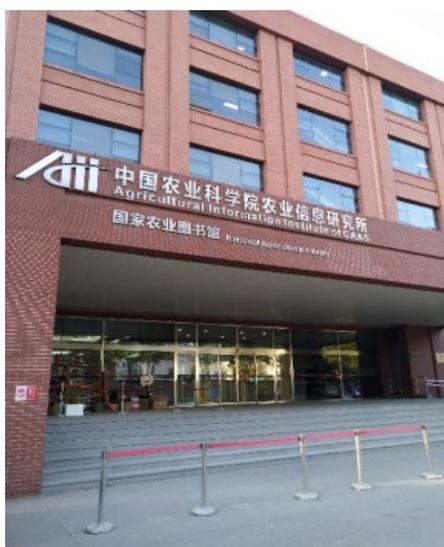


Photo: DCZ

The AII has been established in 1957 and receives 40 million CNY of annual funding for research in the fields of agricultural information technologies, analysis and management. Furthermore, the AII runs the National Agricultural Library and the Center for International Agricultural Research (CIAR) and compiles the annual “China Agricultural Outlook Report”. The DCZ and the S&T Platform in particular was presented by DCZ Senior Advisor Dr. Eva Sternfeld. Dr. Chen Tianjin from the International Department of CAAS provided an overview of funding schemes for bilateral researchers, such as joint funding opportunities by the National Natural Science Foundation of China (NSFC) and the German Research Foundation (DFG), the Sino-EU Inter-governmental Joint Funding Scheme under the Horizon2020 and the Chinese Ministry of Science and Technology, as well as unilateral direct funding from China (CAAS) and Germany.

The German participants shortly introduced their institutions and interest for future Sino-German research collaboration, often followed by a short presentation on corresponding AII research by a Chinese researcher. In the following the topics and research interests are summarised. For more information or contacts of the researchers involved, please feel free to enquire with the DCZ: l.siebert@iakleipzig.de

Topics for potential collaboration

1) Knowledge and communication for sustainability related transitions in agricultural food systems

Prof. Andrea Knierim from the University of Hohenheim presented her research on the Agricultural Knowledge & Information System (AKIS). In response, Prof. Jia Xiangping presented findings of a similar project on knowledge and information transmission to farmers via short messages in China.

Sino-German Agricultural and Food Update

2) Practices to avoid Food Loss and Waste

Dr. Stefan Lange, research coordinator, and Dr. Felicitas Schneider, research fellow at the Thünen Institute for Market Analysis introduced the Thünen-Institute and its role as a representative of Germany in European scientific commissions and bodies. At the MACS-G20 (Meeting of Agricultural Chief Scientists at G20) coordinate Dr. Lange and Dr. Schneider the Collaboration Initiative Food Loss and Waste. They identified several topics for promising cooperation with Chinese research institutions.

Dr. Huang Jiaqi, research assistant from the International Information Division of All, remarked that in China most food loss takes place during processing and harvesting. Among the identified research gaps she pointed out that food waste among vegetables and fruits is still not adequately researched; this is also the case for research on food loss at the processing stage whereas policies and research so far mainly focus on food waste of grains and staple food. The shift of responsibility on to food providers and supermarkets was mentioned as a good example to learn from Germany, whereas China can provide valuable knowledge on how e-commerce platforms can help avoiding food loss on the producer side.



Photo: DCZ

3) Agricultural risk management evaluation

Prof. Matthias Ritter from Humboldt University in Berlin presented his group's research on insurance against rainfall and farmers' willingness to pay for weather risk insurance. Currently, his research team is exploring the weather-yield nexus with artificial neural networks, based on large database of daily soil and weather and corresponding yield data as well as spatial and temporal estimation of tail probabilities in weather extremes by means of extreme value theory, which is actually following a similar study conducted in China.

Dr. Wang Ke from the Research Center for Agricultural Risk Management (RCARM) of CAAS gave a short overview of the achievements of publishing a first country-level risk map for yield risks in 11 major crops in China based on data collected since 1980.

4) Research on organic agriculture

The work of the Research Institute of Organic Agriculture (FiBL) was presented by Dr. Christian Grovermann, emphasising that organic agriculture reaches across the fields of agroecology, ecological intensification and sustainable intensification. He introduced recent research on how organic/agroecological agriculture can feed the world and what comprises a sustainable food system, not only with regard to consumption, but also production.

5) Detection of crop diseases and insect pests by using UVA

Dr. Karl-Heinz Dammer from the Leibniz-Institute for Agricultural Engineering and Bioeconomy (ATB) introduced the latest research project on the detection of crop diseases and insect pests by using UAVs (drones) in collaboration with the Ecological Agricultural Information Service Laboratory, All, in the meeting represented by Dr. Guo Leifeng and Dr. Qin Zhenwang.

This successful first Exchange Forum event will be followed by several more events in

the upcoming months.

Activities of Other Bilateral Cooperation Projects

Reports from Sino-German Crop Production and Agrotechnology Demonstration Park

Weather data from 1956 to 2020 - How the analysis of historical weather data can help with the planning of crop rotation

By Alejandro Figueroa, DCLADP

Weather is an important factor in agriculture that cannot be influenced. However, having agricultural experience on a farm or an area, many problems can be avoided or solved with the help of weather data. For example, it makes no sense to fertilize crops in extreme drought season, because fertilizers are not effective without any available water in the soil. The use of pesticide, such as fungicide, can then be reduced or not used.

If the soil becomes extremely wet, as is often the case in the DCALDP project area, the measures also need to be adjusted. The year of 2020 showed that rice also suffers under extremely wet conditions and cool weather. It did not produce the expected yield and even with high fertilizer applications of up to 600 Kg N/ha (40 Kg N/mu) did not achieve the maximum yields. Extremely high amounts of rainfall results in increased leaching of nutrients which causes environmental pollution. Likewise, it also negatively affects yield and profit.

When looking for alternative crops to expand crop rotations, weather plays an important role. In 2020, over 700 mm of rain fell in June and July, which was a disaster for summer crops such as soybeans, corn, sorghum, etc. These summer crops are in the seedling stage

in June and July, and heavy rainfall negatively affects them in this stage, yields can no longer be brought up or remain at average levels. But we found an exception in the project area: cultivation of rice with an early-ripening variety had brought more yield than the summer crops that had been sown. To be able to make such a decision, experience is significant.

With the arrival of the new team leader, the project started analyzing local weather data. Historical data is very important. Thanks to the records from the weather station in Huanghai Farm, weather for the past 64 years, from 1956 to 2020, could be analyzed. The average annual rainfall was more than 900mm in 50% of all recorded years (Table 1).

Table 1: Evaluation of the annual rainfall in Dayou

< 600 mm	8 years
600 - 700 mm	7 years
700 – 800 mm	5 years
800 – 900 mm	11 years
900 – 1000 mm	12 years
> 1000 mm	22 years

Figure 1 shows the average temperature and rainfall from 1956 to 2019. The red straight line shows the trend of the average temperature, the dark blue straight line shows the trend of rainfall.

The distribution of rainfall poses a major challenge in this region. The figures show that when it rains, it is very intense - which is, a large amount of rain falls in a very short time. Figure 2 shows detailed weather data from 2018.

Figure 3 shows an example of the weather data from the month of July in 2018. In earlier July, about 100mm of rain fell in a few days. In later July, there were two intense rainy days.

Sino-German Agricultural and Food Update

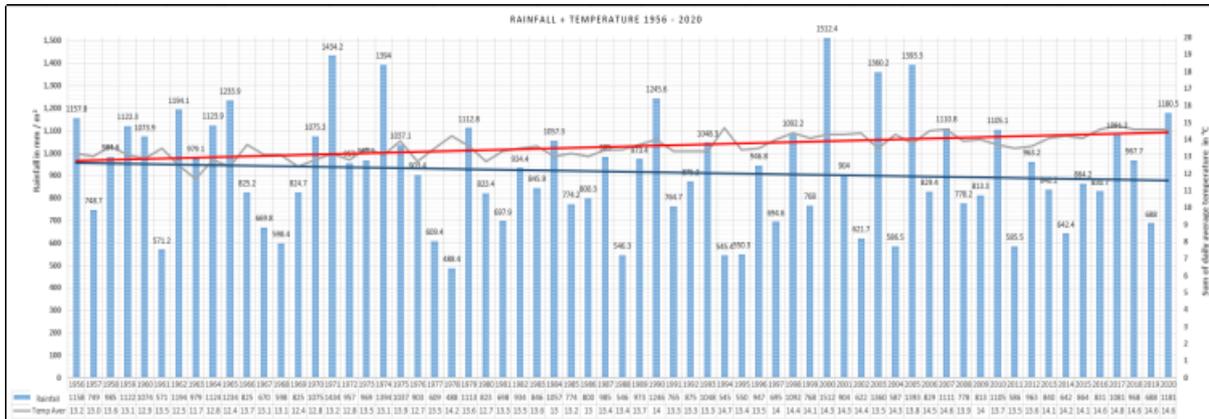


Figure 1

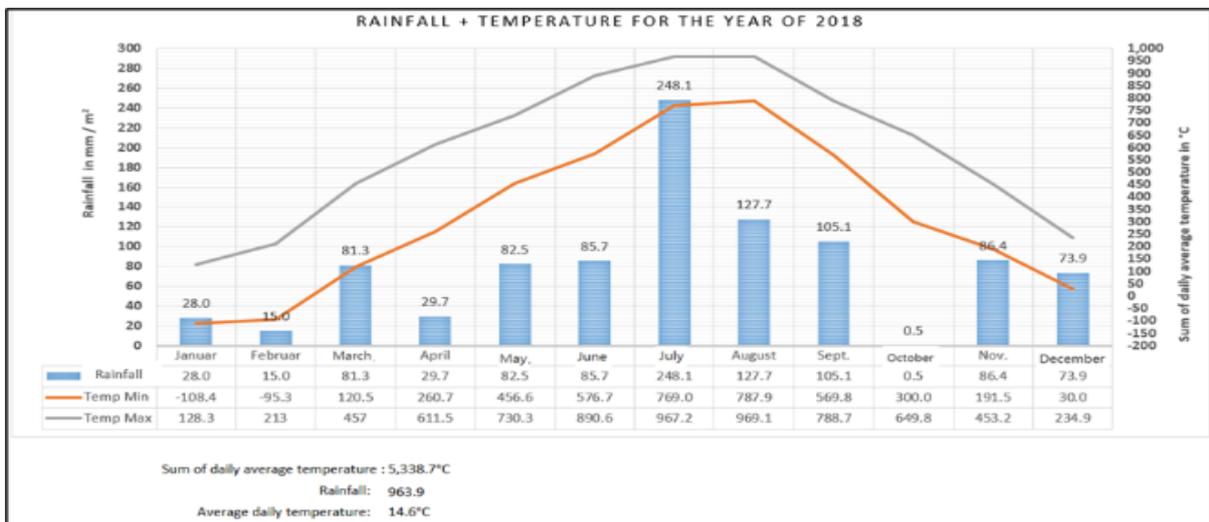


Figure 2

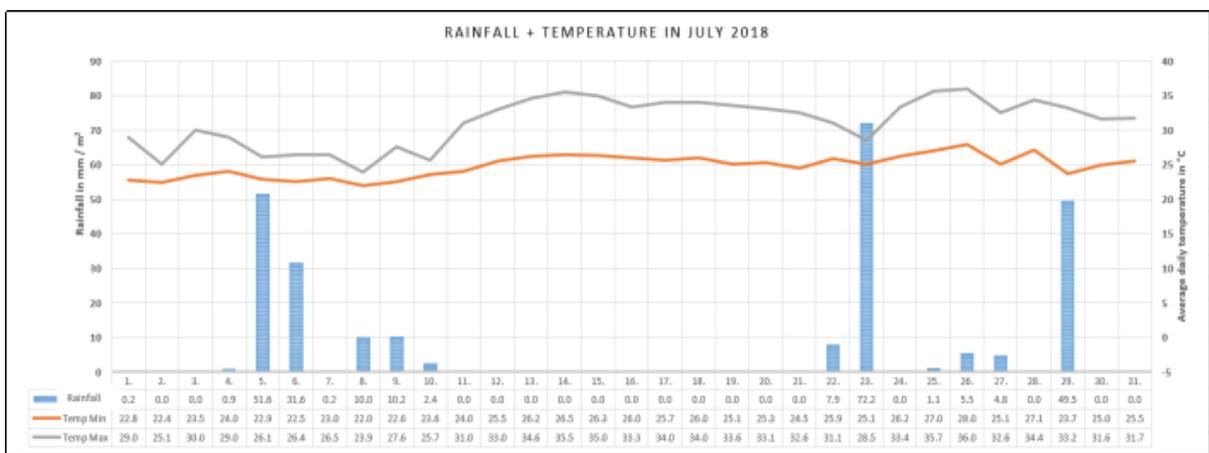


Figure 3: Weather data for the month of July in 2018, location: Dayou

Sino-German Agricultural and Food Update

In 2019, the team leader of the DALDP project started to analyze local weather data. The aim is to draw conclusions to investigate the conditions for further crop rotation with the cultivation of different summer crops.

2019 was a relatively dry year, irrigation

would have led to a better crop development (Fig. 4). Summer crops such as corn at that time were not flooded, which made it difficult for its seedlings to emerge.

At the end of June in 2019, 66mm of rain fell in one night. The next day, not much rain was

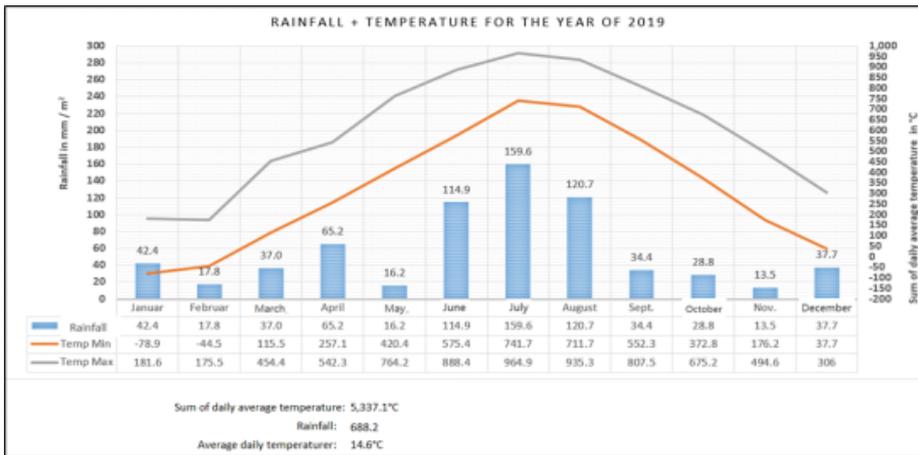


Figure 4: Weather data from 2019, location: Dayou

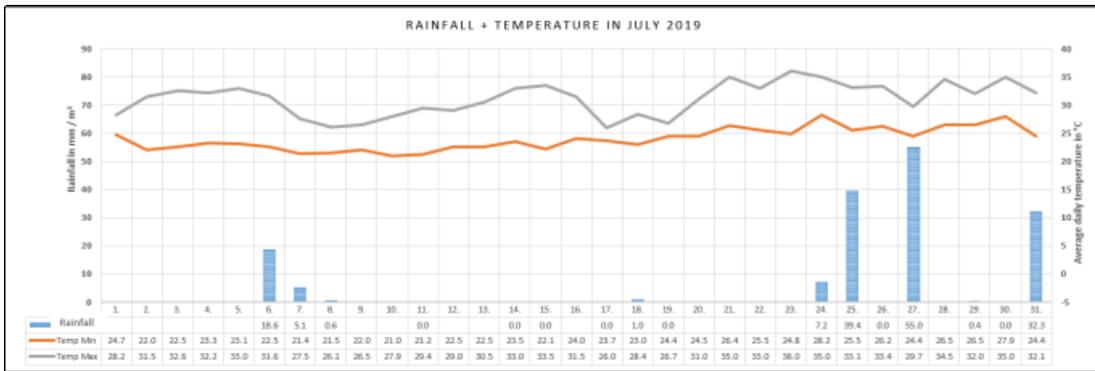


Figure 5: Weather data of July in 2019, location: Dayou



Figure 6: Infested leaves and pods with beetles *paraluperodes suturalis nigrolineatus*, photos by A. Figueroa

Sino-German Agricultural and Food Update

seen. The 126 mm rainfall at the end of July also had no negative impact (Fig. 5).

Even though the summer crops were able to thrive, they did not produce the expected yield. Soybean in particular was very disappointing. The plants developed well, but no or few pods were formed. In addition, the crop was infested with *paraluperodes suturalis nigrolineatus*, a beetle that severely damaged pods and leaves (Fig. 6).

After the harvest it remained dry, which is a good condition for tillage and sowing. Unfortunately, as it was not flooded and irrigated, again seedlings had difficulties to emerge evenly. At this time, the team leader had been thinking about precise irrigation, which could significantly increase emergence and fertilizer efficiency.

The year 2020 was again a humid year, especially from May to July there were large amounts of rainfalls. In many respects it was an extreme year, especially the months of June and July, when it rained as much as in the whole year of 2019. Summer crops were under water for almost two months. Rice also could not tolerate so much rain, and the limited amount of sunshine and the cool temperatures. Considering this, the team leader is wondering whether the DCALDP location is

suitable for the cultivation of summer crops such as corn, soybean, sorghum and he advises no further cultivation of these summer crops. Rice seems to be the only reasonable summer crop in this area, but its cultivation needs to be more sustainable.

Summary

Even though the DCALDP project area is blessed with abundant water, this aspect can also become a challenge. However, if it is extremely dry, this area can, be flooded after sowing, thus ensuring the emergence of the grain. The disadvantage of this method is that the emergence of seedlings is not as good as in Europe. According to the project records, field seedlings emergence rate is less than 80%, mostly it is between 40-60%. The reason is that the plants are kept too long in wet soil, which leads to seedlings' suffering and dying from oxygen deficiency. Irrigation also benefits winter crops such as wheat, barley and rape. If we optimize water distribution, seedling emergence rate of winter crops may increase from 40-60% up to 80%. Fertilizer could be given as needed and we would not merely rely on rainfall as we do now. The cultivation of summer crops such as corn, soy, sorghum, etc., is therefore a great challenge in the DCALDP area and should be

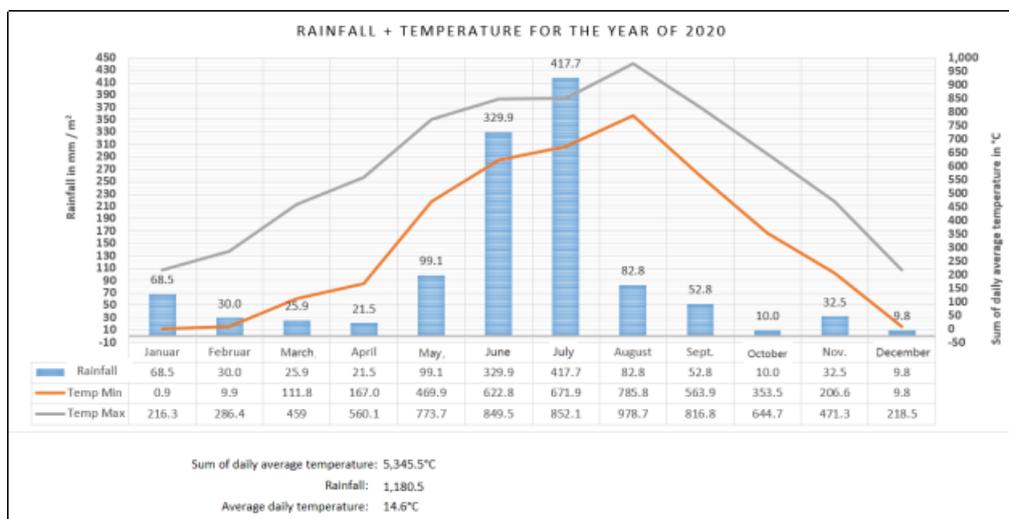


Figure 7: Weather data from 2020, location: Dayou

Sino-German Agricultural and Food Update



Mr. Geng is making a presentation on how to adjust the amount of fertilizer application by using a fertilizer spreader

reconsidered. The risk of intensive rainfall during seedling stage is very high, which will cause severely damage to the crops.

Machinery Capacity Training Together with Business Partners

In order to further develop our project team's capacity, and enhance the machinery working quality as well as the demonstration effect, DCALDP invited Mr. Geng Jinliang from Rauch company, and Mr. Li Guohui from Lemken company to give a training to all team members on 9 and 11 March.

Training 1: Use of Rauch Fertilizer Spreader

Training 2: Proper Use and Adjustment of EurOpal Plow

Mr. Li Guohui, the manager of Lemken, took the correct use and adjustment of the EurOpal plow as an example, introduced the Lemken ground preparation machinery in detail, and guided drivers to practice on it. He explained how to match the main car and how to adjust the overturning plow.

For more information please contact



Mr. Li Guohui from Lemken is explaining the proper use and adjustment of the EurOpal plow and other land preparation machinery

Sino-German Agricultural and Food Update

Report from the Sino-German Animal Breeding and Husbandry Project

Exchange between technical experts from Germany and China in animal breeding and husbandry progresses despite ongoing travel restrictions

By Gerret Fredewess (ADT)

Since travelling is still restricted for European citizens, the team of the Sino-German Animal Breeding and Husbandry Project organized the further exchange of knowledge between Chinese and German Agronomists.

In collaboration with the National Animal Husbandry Service (NAHS), numerous online seminars and conferences were conducted in the swine and cattle disciplines. In addition, they collaborated on best practice manuals on the following topics:

Cattle

Data collection cattle; Reduction of residuals and airborne emissions from dairy farming; Young cattle rearing; Calf rearing; Feed supply for dairy farms in China

Pig

Biosecurity; Reproduction; Artificial Insemination; Farrowing; Reduction of environmentally relevant gases from pig farming; PRRS in pig herds; Rearing of pigs

Another part of the knowledge transfer was the creation of educational videos. These videos were designed with German experts and business partners of the project to illustrate the technical topics in the most practical way. For the several days of filming in Germany and the subsequent video editing, the project was accompanied by a professional video team. The NAHS also provided support for the technical final editing and the translation into Chinese.

After already publishing the educational video on animal evaluation of Brown Swiss last year, two videos on hoof care have now also been completed. Furthermore, we are still working on two educational videos on fertility management in cattle and a video on gilts selection. To be completed in the coming weeks.



Picture: Filming the selection of gilts (ADT)

All videos will be shared with the Chinese network. If you are interested, you can find the videos, manuals, lectures and also more information about the animal husbandry sector on the projects WeChat Page (see scan code). If you have any questions, please feel free to contact Ms. Yang Xiaomin (adtbeijingyang@163.com) and Ms. He Yuan (adtbeijinghe@163.com).

Gerret Fredewess, Project Manager
ADT Project Consulting GmbH
gerret.fredewess@adt.de



DCZ Publications

Application of blockchain in agriculture and food supply chains in China. Study by Dr. Aihematijiang Rouzi

In this study Dr. Rouzi assesses the importance of blockchain technology for China's agricultural sector. He shows that food traceability, agricultural insurance and financing, smart farming, e-commerce and online marketing are promising for application. He also looks at the policies that the Chinese government has introduced to support the blockchain development and introduces initiatives such as GoGoChicken, a Huawei smart cloud platform. The study can be downloaded from the DCZ website: <https://www.dcz-china.org/dcz-publications.html>

From poverty eradication to rural revitalization: China's No. 1 Document and implications for agricultural policy. Policy Brief by Dr. Aihematijiang Rouzi

In this policy brief Dr. Rouzi analyzes the Document No.1, the most important annually released document, which outlines the tasks and targets for China's agricultural sector (see also cover story of Sino-German Agricultural and Food Update No. 13). Dr. Rouzi takes a closer look at the major topics of the 2021 document such as consolidation of the achievements of absolute poverty eradication, rural revitalization, rural infrastructure development, development of modern rural industry, boosting the seed and breeding sector and developing green agriculture. He points out that the success of poverty alleviation and rural revitalization efforts will depend on mitigating the conflicting interests of urban and rural development. More reforms, like relaxing the *Hukou* household registration system and improving social welfare in rural areas are needed. The policy brief can

be downloaded from the DCZ website: <https://www.dcz-china.org/dcz-publications.html>

Recommended Reading

Rural-Urban Migration and Agro-Technological Change in Post-Reform China by Lena Kaufmann. Amsterdam University Press, 2021 eISBN open access: <https://www.bibliopen.org/p/bopen/9789048552184>

Since China's reform policies of the 1980s, national migration patterns show a clear trend of movement towards Chinese cities along the east coast. Former farmers turning into urban workers usually stay connected to their land resources and family members left behind. The conflicting pressures of migration and ensuring a continued cultivation of their farmland can be seen as both opportunity and burden. Even in the light of new reforms of the hukou system of household registration, the importance of rural land rights is an argument not to register for an urban status as land resources are seen as a safety net.

Lena Kaufmann is looking specifically at the key role that rice paddy fields play for Chinese farmers as a means to cope with uncertainty while making strategic decisions within a migration setting. Furthermore, she acknowledges also the socio-technical resources used by both farmers who stay behind and those who migrate. In light of multi-dimensional reasoning which is necessary in social decisions that often not only pursue short- but also long-term projects, the author leaves the discourse of Chinese farmers being passive and backward but approaches them as forward-looking actors who are an active part of Chinese modernity.

Sino-German Agricultural and Food Update

Upcoming Events 2020-21

With the ongoing Corona crisis all dates of conferences and trade fairs tbc.

Date	Location	Event	Contact
June			
2-3	Nanjing	DCZ Sino-German Agribusiness Conference	www.dcz-china.org
7-9	Halle (Germany) / online (tbc)	IAMO Forum Agrifood Systems in the Bioeconomy (with a China Panel)	https://forum2021.iamo.de/about-the-conference/
8-10	Gut Brockhof, Erwitte Lippstadt (Germany)	DLG-Feldtage Meet the Crop Professionals	www.dlg-feldtage.de
14	Berlin online	Rurban China Lunch, China Center TU Berlin Lecture: Ahmatjan Rouzi (DCZ): Rural development and sustainable smart agriculture	https://www.china.tu-berlin.de/menue/projekte/urbanixx/china_lunches/ urbanixx@china.tu-berlin.de
22-24	Shanghai	China International Agrochemical and Crop Protection Exhibition	Shanghai New International Expo Centre https://www.cantonfair.net/event/648-china-international-agrochemical-corp-protection-exhibition-cac#mycontent maggie@agrochemshow.com
22-24	Shanghai	China International Irrigation Show 2021	Shanghai New International Expo Centre http://en.irrishow.com/ zhaoqing@ccpitchem.org.cn
22-24	Shanghai	China International Seed Trade Exhibition	Shanghai New International Expo Centre https://www.cantonfair.net/event/1931-china-international-seed-trade-exhibition#mycontent zhaoqing@ccpitchem.org.cn
22-24	Shanghai	China International Agri-Aviation Show 2021	Shanghai New International Expo Centre https://www.cantonfair.net/event/1932-china-international-agri-aviation-show#mycontent zhaoqing@ccpitchem.org.cn

Sino-German Agricultural and Food Update

Date	Location	Event	Contact
23-24	Hessian State farm Gladbacherhof, Aumenau	Öko-Feldtage (Organic Field Days)	https://oeko-feldtage.de/?lang=en
24	Guangzhou	World Ecological Agricultural Products and Food Exhibition (WAF)	Canton Fair co https://www.hkze.com/event/606-world-ecological-agricultural-products-and-food-exhibition-waf mplexife@informa.com
24-26	Guangzhou	World Food Guangzhou	Poly World Trade Center Paul.chen@ubmsinoexpo.com
25	Shenzhen	China (Shenzhen) International Tea Industry Expo	Shenzhen Convention and Exhibition Center
July			
5	online	Rurban China Lunch, China Center TU Berlin Lecture Dr. Lena Kaufmann: Rural-Urban Migration and Agro-Technological Change in Post-Reform China	https://www.china.tu-berlin.de/menue/projekte/urbanixx/china_lunches/ urbanixx@china.tu-berlin.de
August			
12	Hong Kong	Hong Kong International Tea Fair	Hong Kong Convention and Exhibition Centre
16	Kunming	China Animal Husbandry and Feed Industry Expo	Kunming Dianchi Convention & Exhibition Center ynxmzh@126.com
September			
09	Guangzhou	Guangzhou World Agricultural Expo (WAGRI)	Guangzhou – Poly World Theater 329240614@qq.com
12	Chengdu	Eurotier China	Chengdu Century City New International Convention & Exhibition Center c.armstrong@DLG.org;s.zuleger@dlg.org
October			
11-24	Kunming	UN Biodiversity Conference COP 15 of Convention on Biological Diversity (tbc)	https://www.cbd.int/article/new-dates-cop15-october-2021
November			
12-14	Shenzhen	Sino-German Agricultural Week	www.dcz-china.org
12-14	Shenzhen	World Expo on Digital Agriculture	fecctzj@126.com

Sino-German Agricultural and Food Update

Imprint

This issue was compiled by the international DCZ team. For enquiries and subscription please send an email to info-dcz@iakleipzig.de

Any news about upcoming events and conferences to share? Please send your information to e.sternfeld@iakleipzig.de

Address: Room 201, Zhong Ou Hotel, 55 Nongzhan Beilu, Chaoyang District, 100125 Beijing, PR China

Website: www.dcz-china.org

DCZ on LinkedIn: <https://www.linkedin.com/company/dcz-china/>

The Sino-German Agricultural Centre (DCZ) (project no.: CHN 18-01) is supported with funds from the Federal Ministry of Food and Agriculture (BMEL) via GFA Consulting Group GmbH and implemented by IAK Agrar Consulting GmbH as leading company in a consortium with Leibniz Institute for Agricultural Development in Transition Economies (IAMO).

Photo Credits

Back Cover (from left to right):

Peggy Günther **(PG)** www.freepik.com **(FP)** Wikimedia Commons **(WM)**

First row: FP (user6835987), FP (blanscape)

Second row: PG, FP (jcomp), FP (rafodessa), FP (torwaipfoto)

Third row: FP (pompixs), PG, PG

Fourth row: PG, FP (n_u_t), PG

Fifth row: WM (werkтуigendagen), FP (tsekhmister)

Sixth row: FP (bugphai), PG, FP (polubiatka)

Seventh row: FP (mailsonpignata), FP (rafapress), FP (user6924197), FP (chiradech), WM (Stadtwerke Energie Jena Poessneck)

